# A TABULATION OF OHIO BOBWHITE QUAIL FOODS

VINCENT SCHULTZ[1]
The Ohio State University, Columbus, Ohio

Although the bobwhite quail, *Colinus v. virginianus*, has been on the protected list in Ohio since 1912, the time may come when vigorous legislative pressure will change its status from that of a song bird to a game species. Knowledge of the food requirements of a game species is one of the first essentials to the establishment of sound management practices. The almost complete lack of data on the food habits of the bobwhite quail in Ohio has led the writer to present a detailed report, for the records, of the analysis of 70 quail crops. These crops were collected in various Ohio counties while conducting a vitamin A deficiency study on the bobwhite quail during the winter of 1946–47.

Of the two food habit studies known to have been made in Ohio neither one is of any great value due to limited availability and incompleteness. The results of Judd's study in 1890 is limited to 8 specimen cards on file at the Patuxent Research Refuge, Laurel, Maryland. Hick's report (Bullentin Number 105 of The Ohio Division of Conservation and Natural Resources) on the analysis of 68 quail stomachs is of limited value as it is not readily available and the results obtained from birds from various physiographic areas of the state have been combined. It is the writer's opinion that the results should be tabulated on a physiographic bais rather than by using a method of combining the results and considering the final results as indicative of the feeding habits of the quail in Ohio. No method of compiling the results of stomach or crop analysis is entirely free from the danger of misrepresentation of a species' actual food habits. An attempt is made in Tables 1 and 2 to eliminate or reduce to a practical minimum this tendency of misrepresentation. These tables contain the results of the analysis of 70 quail crops. Birds that are trapped by baiting generally have little or no natural food present in their crops; therefore, data from such birds presented on a total volume basis are not comparable with similar data obtained from birds collected by shooting. As data obtained from quail that were shot or trapped was not considered to be comparable, presentation of the findings is in two separate tables. Table 1 contains data obtained from 46 quail collected by shooting from various counties, as follows: Athens (Nov.—1 bird), Cuyahoga (Aug.—1 bird, Jan.—1 bird, Mar.—2 birds), Delaware (Nov.—2 birds), Medina (Jan.—1 bird), Meigs (Dec.—2 birds), Montgomery (Jan.—1 bird), Vinton (Nov.—6 birds, Dec.—17 birds, Jan.—6 birds, Feb.—8 birds), and Williams (Nov.—1 bird). Table 2 contains data obtained from 24 birds trapped by baiting, as follows: Delaware (Dec.—7 birds), Franklin (Oct.—5 birds, Nov.—2 birds, Dec.—1 bird, Feb.—4 birds) and Medina (Feb.—5 birds). Commercial scratch feed and cracked corn were used as bait

[1]The analyses were conducted while on a research fellowship granted by The Ohio Co-operative Wildlife Research Unit: The Ohio State University, The Ohio Division of Conservation and Natural Resources, The Fish and Wildlife Service and The Wildlife Management Institute co-operating. Personal acknowledgments are made to A. C. Martin, R. T. Mitchell, K. A. Mitchell, R. Will and D. L. Leedy.

and as their presence in the crops resulted from unnatural conditions they were not tabulated in Table 2.[2]

TABLE I

CONTENTS OF QUAIL CROPS FROM SHOT SPECIMENS

I. PLANT MATERIAL

*Acalypha* sp. ..... Unglac.—D. 1 (1–s)
*Acalypha virginica* ..... Glac.—J. 1(2–s); Unglac.—D. 2(17–s)
*Actinomeris alternifolius* ..... Unglac.—D. 2(1.5 cc)
*Ambrosia artemisiifolia* ..... Glac.—J. 2(.6cc); Unglac.—N. 6(71.0cc), D. 16 (83.8cc), J. 2(7.8cc)
*Anagallis arvensis* ..... Unglac.—J. 1(12–s)
*Asclepias* sp. ..... Unglac.—N. 1(1–s), D. 4(1.5cc)
*Avena sativa* ..... Glac.—A. 1(9.0cc)
*Bidens aristosa* ..... Unglac.—N. 1(1–s), D. 2(24–s)
*Bromus secalinus* ..... Unglac.—N. 1(.7cc)
*Celastrus scandens* ..... Unglac.—D. 2(.2cc)
*Cerastium* sp. ..... Unglac.—D. 1(1–s)
*Cerastium vulgatum* ..... Glac.—A. 1(7–s)
*Compositae* ..... Glac.—J. 1(1–s)
*Desmodium* sp. ..... Unglac.—N. 4(8.0cc), D. 4(2.1cc), F. 6(1.0cc)
*Digitaria ischaemum* ..... Unglac.—D. 2(4–s)
*Euphorbia corollata* ..... Unglac.—N. 1(1–s)
*Galium* sp. (green vegetative) ..... Unglac.—D. 2(2.2cc)
*Geum* sp. ..... Unglac.—D. 1(2–s)
*Glycine* max ..... Glac.—M. 2(10.0cc)
*Impatiens* sp. ..... Unglac.—N. 3(.2cc), D. 7(13.9cc)
*Leersia oryzoides* ..... Unglac.—D. 1(.3cc)
*Lespedeza* sp. ..... Unglac.—D. 3(9–s)
*Lespedeza stipulacea* ..... Unglac.—J. 5(26.9cc), F. 1(.6cc)
*Lespedeza striata* ..... Unglac.—F. 1(.2cc)
*Oxalis* sp. ..... Glac.—A. 1(2–s), J. 1(1–s); Unglac.—D. 1(1–s)
*Oxalis* sp. (green vegetative) ..... Unglac.—F. 1(t)
*Panicum capillare* ..... Glac.—N. 2(.2cc); Unglac.—N. 1(1–s), D. 3(1.1cc)
*Panicum* sp. ..... Unglac.—N. 4(1.1cc), D. 5(.3cc), F. 2(2–s)
*Paspalum laeve* ..... Unglac.—N. 1(6–s), D. 1(3–s)
*Paspalum* sp. ..... Unglac.—N. 3(.3cc), D. 1(1–s), J. 1(1–s)
*Physalis* sp. ..... Unglac.—N. 1(20–s)
*Polygonum aviculare* ..... Glac.—N. 1(1–s)
*P. dumetorum* ..... Unglac.—N. 1(.4cc), D. 2(.1cc)
*P. hydropiper* ..... Unglac.—D. 1(.5cc)
*P. pennsylvanicum* ..... Unglac.—N. 1(1–s), D. 5(8.9cc)
*P. persicaria* ..... Glac.—A. 1(6–s); Unglac.—D. 3(.4cc)
*P. punctata* ..... Unglac.—N. 1(3–s)
*Portulaca oleracea* ..... Glac.—A. 1(30–s)
*Potentilla* sp. ..... Unglac.—D. 1(1–s)
*Prunus serotina* ..... Unglac.—D. 1(4.0cc)
*Quercus* sp. ..... Unglac.—D. 3(6.4cc), F. 2(15.0cc)

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[2]Glac. and unglac. refer to quail collected in glaciated and unglaciated Ohio, respectively. Letters A, O, D, J, F and M refer to the months of August, October, December, January, February and March, respectively. The number preceding the brackets refers to the number of specimens examined in which the particular material was found. Symbols in brackets refer to the total amount in the crops for that particular month, either as a number of seeds (–s), trace (t), or number of cc. (–cc.). The number within the brackets that pertains to animal material refers to the number of different individuals. All animal material except where otherwise indicated refers to adult forms.

*Example:* Glac.–D. 2(4–s).

Two specimens collected in glaciated Ohio in December contained a total of four seeds.

*Scientific names from:*

Britton, W. E. 1920. Check list of the insects of Connecticut. State Geological and Natural History Survey, Public Document No. 47.

Schaffner, J. H. 1914. Catalog of Ohio vascular plants. Ohio Biological Survey, Bulletin Number 2.

TABLE 1—*Continued*

*Rhus copallina*.....Unglac.—D. 4(2.9cc), F. 1(3.5cc)
*Robinia pseudo-acacia*.....Unglac.—D. 1(3–s)
*Rubus* sp.....Glac.—A. 1(3–s)
*Rumex acetosella*.....Glac.—J. 1(.7cc), M. 1(.1cc); Unglac.—N. 1(7–s), D. 1(2–s)
*Rumex acetosella* (green vegetative)...Unglac.—D. 3(.1cc), F. 1(t)
*Sassafras sassafras*.....Unglac.—D. 4(.7cc)
*Setaria glauca*.....Glac.—J. 2(.4cc); Unglac.—D. 1(3–s), J. 2(1.3cc)
*Sida spinosa*.....Unglac.—D. 1(1–s)
*Trifolium pratense*.....Unglac.—D. 1(10–s)
*Trifolium repens* (green vegetative)...Unglac.—N. 3(t), D. 2(t), J. 2(t), F. 1(.1cc)
*Trifolium* sp.....Unglac. —N. 1(1–s), D. 1(1–s)
*Triticum aestivum*.....Unglac.—N. 1(2–s), D. 1(1–s), J. 1(4–s)
*Vitis* sp.....Unglac.—N. 1(1.5cc), D. 5(17.2cc)
*Zea Mays*.....Glac.—N. 2(1.0cc); Unglac.—N. 2(16.1cc), D. 6 (6.6cc)
*Zea mays* (sweet).....Glac.—J. 1(6.5cc)
Unknown:
Fruit skin.....Unglac.—J. 1(t)
Tuber-like root stocks of grass (green).....Unglac.—D. 1(.1cc)
Twig.....Unglac.—D. 1(.2cc)
Green vegetative material.....Glac.—A. 1(t); Unglac.—N. 2(t), D. 4(.1cc), F. 3(t)

II. Animal Material

Acrididae.....Unglac.—N. 3(4)
*Agallia* sp.....Glac.—J. 1(1)
Aphididae.....Unglac.—N. 1(1), J. 1(t of 8)
Arachnida (spider).....Unglac.—D. 2(4)
Carabidae.....Unglac.—N. 1(1)
Carabidae larva.....Unglac.—N. 4(14)
Cercopidae.....Glac.—A. 1(1); Unglac.—N. 1(1), D. 1(2)
*Chalepus dorsalis*.....Unglac.—D. 2(4)
Chrysomelidae.....Glac.—A. 1(2); Unglac.—N. 1(1), D. 1(3)
Cicadellidae.....Unglac.—N. 1(1), D. 1(1)
Elachistidae.....Unglac.—N. 1(1)
Coleoptera larva.....Unglac.—N. 2(2)
Corsicus.....Unglac.—N. 1(1)
Curculionidae.....Unglac.—N. 1(1)
Elateridae.....Glac.—A. 1(1)
Formicidae.....Unglac.—N. 1(2)
Gastropoda (slug).....Unglac.—N. 1(2)
Gastropoda (snail).....Unglac.—N. 1(2), D. 1(2)
Hymenoptera.....Unglac.—N. 1(1)
Lepidoptera larva.....Unglac.—N. 1(1)
*Lygus pratensis*.....Glac.—A. 1(1)
Staphylinidae.....Unglac.—N. 1(1)
Sawfly larva.....Glac. A. 1(15)
Unknown.....Unglac.—N. 1(1)

III. Miscellaneous

Debris.....Unglac.—N. 2(.6cc), D. 4(2.4cc), J. 1(.1cc)
Grit.....Glac.—J. 1(t); Unglac.—N. 1(t), D. 2(.5cc), F. 1(t)

## TABLE II

Contents of Quail Crops from Trapped Specimens

I. Plant Material

*Ambrosia artemisiifolia*.....Glac.—F. 1(1–2)
*Bidens* sp.....Glac.—D. 2(2–s)
*Cryptotaenia canadensis*.....Glac.—F. 3(.2cc)
*Cyperus* sp. (green vegetative).....Glac.—D. 1(t)
*Desmodium* sp.....Glac.—D. 5(.6cc)
*Digitaria sanguinalis*.....Glac.—D. 1(1–s)
*Festuca nutans*.....Glac.—F. 1(3–s)

TABLE II—*Continued*

*Fraxinus* sp.....Glac.—D. 1(2–s)
*Geum* sp.....Glac.—F. 1(3–s)
*Maclura pomifera*.....Glac.—D. 1(1–s)
*Oxalis* sp.....Glac.—O. 1(1–s)
*Panicum capillare*.....Glac.—D. 1(3–s), F. 1(1–s)
*Polygonum convolvulus*.....Glac.—N. 1(1–s)
*Polygonum persicaria*.....Glac.—F. 2(2–s)
*Potentilla* sp. (green vegetative).....Glac.—F. 1(t)
*Rumex acetosella* (green vegetative)...Glac.—N. 1(t)
*Solanum nigrum*.....Glac.—O. 1(10–s)
*Setaria glauca*.....Glac.—F. 3(.2cc)
*Setaria viridis*.....Glac.—O. 1(1–s)
*Trifolium repens* (green vegetative)...Glac.—D. 1(t)
*Viola* sp.....Glac.—O. 5(.7cc)
*Vitis* sp.....Glac.—O. 1(3–s)
Unknown:
Green vegetative material.....Glac.—O. 1(t), N. 1(t), F. 3(t)

II. Animal Matter

Acrididae.....Glac.—O. 1(3), N. 1(1)
Arachnida (spider).....Glac.—F. 1(t–1)
Carabidae.....Glac.—D. 1(3)
Gastropoda (snail).....Glac.—O. 1(2)
Hemiptera nymph (?).....Glac.—O. 1(1)
Ichneumonidae.....Glac.—F. 1(t–1)

III. Miscellaneous

Grit.....Glac.—D. 1(t)